

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte MARK J. KIRSCHNER  
and RUSTAM H. SETHNA

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Appeal No. 1997-1371  
Application No. 08/213,290

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ON BRIEF

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Before DOWNEY, WILLIAM F. SMITH, and LORIN, Administrative Patent Judges.  
DOWNEY, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the final rejection of claims 1-3.  
Claims 4-8 stand allowed.

Appellants withdraw claim 3 from appeal (Brief, page 1, III). Accordingly, the  
appeal as to claim 3 is dismissed.

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Claim 1, the only independent claim, is illustrative of the subject matter on appeal and reads as follows:

A method of producing bleached wood pulp comprising:

digesting wood chips in a digestion stage to produce brownstock pulp and weak black liquor;

washing the brownstock pulp and extracting the weak black liquor;

introducing the brownstock pulp, after having been washed, into sequential bleaching stages, including oxygen delignification and ozone bleaching stages, to produce a bleached wood pulp product;

the oxygen delignification stage utilizing an oxygen containing stream and the ozone bleaching stage utilizing an ozone/oxygen containing stream and producing a waste stream principally containing water vapor, carbon dioxide, ozone, and oxygen;

recovering the waste stream and scrubbing the waste stream with an aqueous, sodium sulfide and sodium hydroxide containing solution to remove ozone and carbon dioxide from the waste stream and thereby form a scrubbed stream; and

forming the oxygen containing stream for use in the oxygen delignification stage from the at least part of the scrubbed stream.

The references relied upon by the examiner are:

Barker et al. (Barker)	3,860,479	Jan. 14, 1975
Suzuki et al. (Suzuki)	4,855,123	Aug. 8, 1989
Griggs et al. (Griggs)	5,164,043	Nov. 17, 1992
Friend	5,296,097	Mar. 22, 1994

#### Prior Art Rejections

A. Claims 1 and 2 stand rejected under 35 U.S.C. § 103, with the examiner relying

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upon Griggs and Friend as evidence of obviousness. Claim 2, which depends from claim 1, further stands rejected under 35 U.S.C. § 103, with the examiner relying upon Griggs, Friend, Suzuki, and Barker as evidence of obviousness.

We reverse.

The claims at issue

- B. Claim 1, representative of the claims on appeal, is directed to a method of producing bleached wood pulp comprising the steps summarized as follows:
1. digesting wood chips to produce brownstock pulp and weak black liquor;
  2. washing the brownstock pulp and extracting the weak black liquor;
  3. introducing the brownstock pulp into an oxygen delignification stage utilizing an oxygen containing stream;
  4. thereafter introducing the brownstock pulp into an ozone bleaching stage utilizing an ozone/oxygen containing stream and producing a waste stream principally containing water vapor, carbon dioxide, ozone, and oxygen;
  5. scrubbing the waste stream with an aqueous solution containing sodium sulfide and sodium hydroxide to –
    - a. remove ozone and carbon dioxide from the waste stream;
    - b. form a scrubbed stream; and
  6. using the scrubbed stream to form at least part of the oxygen containing stream for the oxygen delignification stage.

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Prior art cited by the examiner as evidence of obviousness

- C. The examiner relies upon Griggs as the primary reference.
1. Griggs teaches digesting wood chips to produce brownstock pulp and weak black liquor (col. 1, line 56, through col. 2, line 45; col. 11, lines 10-60).
  2. Griggs describes washing the brownstock pulp and extracting the weak black liquor (col. 2, lines 46-66).
  3. Griggs discloses introducing the brownstock pulp into an oxygen delignification stage utilizing an oxygen containing stream (col. 11, line 60, through col. 16, line 14).
  4. Griggs shows the subsequent step of introducing the brownstock pulp into an ozone bleaching stage utilizing an ozone/oxygen containing stream and producing a waste stream (col. 16, line 15, through col. 20, line 45). It appears that the waste stream would principally contain water vapor, carbon dioxide, ozone, and oxygen because water vapor would have come from the water in the pulp and from oxidation of wood-based materials, carbon dioxide would come from oxidation as well, and both ozone and oxygen would have been leftover from the ozone/oxygen stream.
- D. There are differences between the teachings of Griggs and the claimed invention.

1. Griggs does not teach scrubbing the waste stream with an aqueous solution containing sodium sulfide and sodium hydroxide to –
    - a. remove ozone and carbon dioxide from the waste stream; and
    - b. form a scrubbed stream.
  2. Griggs does not teach forming the oxygen containing stream for use in the oxygen delignification stage from at least part of the scrubbed stream.
    - a. Griggs discloses recycling the aqueous effluent from the ozone bleaching stage into the oxygen delignification stage (Fig. 4, two lower schematics; col. 5, lines 22-28; col. 10, lines 50-55; and col. 22, line 30, through col. 23, line 30).
      - b. In Griggs, however, the spent ozone/oxygen containing stream is regenerated for reuse in the ozone bleaching stage (Fig. 2, item 70; col. 20, lines 6-13).
- E. The examiner relies on the teachings of Friend to account for the differences between Griggs and the claimed invention.
1. Friend shows the step of introducing brownstock pulp into an ozone bleaching stage utilizing an ozone/oxygen containing stream and producing a waste stream principally containing water vapor, carbon dioxide, ozone, and oxygen (Fig. 1; col. 4, lines 23-46);

2. Friend teaches scrubbing the waste stream with an aqueous solution such as oxidized white liquor or other alkaline mixtures from the pulping and bleaching processes (col. 3, lines 23-28; and col. 7, line 46, through col. 8, line 12) to –

- a. remove ozone<sup>1</sup> and carbon dioxide from the waste stream (col. 4, lines 38-46); and
  - b. form a scrubbed stream (col. 4, lines 35-37 ).
3. However, Friend does not teach forming the oxygen containing stream for use in the oxygen delignification stage from at least part of the scrubbed stream. Instead, the scrubbed stream is recycled into the ozone generator (col. 1, lines 9-13).

#### Opinion

The examiner rejects claims 1 and 2 under 35 U.S.C. § 103 as being unpatentable over Griggs in view of Friend. We reverse.<sup>2</sup>

As noted above, neither Griggs nor Friend teach the step of forming the oxygen containing stream for use in the oxygen delignification stage from at least part of the scrubbed stream. Instead, both references teach recycling the spent ozone/oxygen stream

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<sup>1</sup> Friend also teaches that the ozone may be thermally or catalytically destroyed (col. 7, lines 17-28).

<sup>2</sup> In view of our reversal of this rejection, we do not find it necessary to discuss the separate rejection of dependent claim 2 over Griggs, Friend, Suzuki and Barker, especially since Suzuki and Barker do not overcome the deficiencies of Griggs and Friend.

back into the ozone bleaching stage.<sup>3</sup> The examiner argues, nonetheless:

It would have been obvious to the artisan that some of the unreacted oxygen that would be present in the ozone reactor exhaust gas of Griggs et al. could be recycled to the oxygen bleach stage of Griggs et al. [And that] Normally only ordinary skill is involved in the recycling of unreacted or incompletely processed materials back to earlier stages of the process. In re Korpi 73 USPQ 229; Ex parte Brown 65 USPQ 531.<sup>4</sup>

Thus, the examiner relies solely upon the skill of the artisan to establish obviousness of the claimed invention. However, in order to reach a conclusion that the claimed subject matter, as a whole, would have been obvious to one of ordinary skill in the art, case law requires that there be some teaching, suggestion, or inference in the prior art or knowledge generally available to one of ordinary skill in the relevant art which would have led one skilled in the art to combine the relevant teachings of the prior art to arrive at the claimed subject matter. Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 297 n.24, 227 USPQ 657, 667 n.24 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); citing ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). Herein, the examiner posits that “[N]ormally only ordinary skill is involved in the recycling of unreacted or incompletely processed materials back to earlier stages of the process” citing In re Korpi, supra and Ex parte Brown, supra. We have no doubt that recycling is

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<sup>3</sup> See Griggs, Fig. 2 (item 70), col. 20, lines 6-13; and Friend, col.1, lines 9-13.

<sup>4</sup> November 5, 1996 Examiner’s Answer, page 6, paragraph 1.

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commonly practiced and that it serves both economical and environmental purposes. However, the claims before us are directed to a specific method of producing bleached wood pulp that includes a step of recycling a specific scrubbed waste stream as part of the oxygen containing stream for the oxygen delignification stage. Hence, the claims recite a specific step of recycling a particular stream to a particular stage in the specified process. On this record, the examiner has failed to show a teaching in the prior art or knowledge generally available to one of ordinary skill in the relevant art of the desirability of forming the oxygen containing stream for use in the oxygen delignification stage from at least part of the scrubbed stream. The mere fact that the prior art may be modified in the manner suggested by the examiner does not make the modification obvious unless the prior art suggests the desirability of such modification. In re Brouwer, 77 F.3d 422, 425, 37 USPQ2d 1663, 1666 (Fed. Cir. 1996); See also In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992).

Lastly, we note that the examiner relies upon the Korpi and Brown decisions in support of his position. We point out that the examiner's holding in Korpi, that the claimed limitation to recycling at least a portion of the unreacted hydrocarbons was common and lacking invention, was supported by the citation of a prior art reference which disclosed recycling of unreacted hydrocarbons, See Korpi 730 USPQ at 231.

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To the extent that the examiner may be extracting a per se rule from either Korpi or Brown that recycling of unreacted or incompletely processed materials is conventional and thus an obvious modification to any process, we point out that there are no per se rules when determining obviousness under 35 U.S.C. § 103. As stated in In re Ochai, 71 F.3d 1565, 1572, 37 USPQ2d 1127, 1133 (Fed. Cir. 1995):

The use of per se rules, while undoubtedly less laborious than a searching comparison of the claimed invention-including all its limitations-with the teachings of the prior art, flouts section 103 and the fundamental case law applying it. Per se rules that eliminate the need for fact-specific analysis of claims and prior art may be administratively convenient for PTO examiners and the Board. Indeed, they have been sanctioned by the Board as well. But reliance on per se rules of obviousness is legally incorrect and must cease. Any such administrative convenience is simply inconsistent with section 103, which, according to Graham [v. John Deere Co.], 383 U.S. 1, 148 USPQ 459 (1966)] and its progeny, entitles an applicant to issuance of an otherwise proper patent unless the PTO establishes that the invention as claimed in the application is obvious over cited prior art, based on the specific comparison of that prior art with claim limitations. We once again hold today that our precedents do not establish any per se rules of obviousness, just as those precedents themselves expressly declined to create such rules. Any conflicts as may be perceived to exist derive from an impermissible effort to extract per se rules from decisions that disavow precisely such extraction.

To paraphrase the court in Ochai, at 71 F.3d at 1570, 37 USPQ2d at 1132, “there are not [Korpi/Brown] obviousness rejections...but rather only section 103 obviousness rejections.”

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Since the examiner has not sustained his burden to establish a prima facie case of unpatentability, we reverse the rejection of claims 1 and 2.

REVERSED

MARY F. DOWNEY	)	)
Administrative Patent Judge	)	)
	)	)
	)	)
	)	) BOARD OF PATENT
WILLIAM F. SMITH	)	)
Administrative Patent Judge	)	) APPEALS AND
	)	)
	)	) INTERFERENCES
	)	)
HUBERT C. LORIN	)	)
Administrative Patent Judge	)	)

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The Boc Group, Inc.  
Patent, Trademark and Licensing Dept.  
100 Mountain Avenue, Murray Hill  
New Providence, NJ 07974

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